

P21902.A07



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants : Wolfgang RUF et al.

Group Art Unit: 1731

Appln. No : 10/072,876

Examiner: J. Fortuna

Filed : February 12, 2002

For : LAMELLA OF A HEADBOX OF A PAPER, CARDBOARD OR  
TISSUE MACHINE

**APPEAL BRIEF UNDER 37 C.F.R. § 1.192**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This appeal is from the Examiner's final rejection of claims 1 - 53 as set forth in the Final Official Action of March 26, 2003.

A Notice of Appeal in response to the March 26, 2003 Final Office Action was filed July 28, 2003, along with a Request for a One-month Extension of Time. Further, the instant Appeal Brief is timely submitted within two months of the filing of Appellants' Notice of Appeal, i.e., by September 29, 2003 (September 28, 2003 being a Sunday).

The requisite fee under 37 C.F.R. 1.17(c) in the amount of \$ 320.00 for the filing of the Appeal Brief is being paid by check submitted herewith. However, if for any reason the necessary fee is not associated with this file, the Commissioner is authorized to charge the fee for the Appeal Brief and any necessary extension of time fees to Deposit Account No.

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This appeal brief is being submitted in triplicate, pursuant to 37 C.F.R. 1.192(a).

**(1) REAL PARTY IN INTEREST**

The real party in interest is Voith Paper Patent GmbH by an assignment recorded in the U.S. Patent and Trademark Office on February 12, 2002 at Reel 012584 and Frame 0133.

**(2) RELATED APPEALS AND INTERFERENCES**

No related appeals and/or interferences are pending.

**(3) STATUS OF THE CLAIMS**

Claims 1 - 53, the only claims pending in the instant application, stand finally rejected.

**(4) STATUS OF THE AMENDMENTS**

No amendment have been submitted subsequent to the Final Office Action of March 26, 2003.

**(5) SUMMARY OF THE INVENTION**

The instant invention is directed to a lamella of a headbox of a paper, cardboard or tissue machine, and to headbox, which features a machine-width headbox nozzle having an exit opening and the lamella. The nozzle has a nozzle length formed by an upper nozzle wall and a lower nozzle wall and the lamella is mounted within the nozzle. (Specification, paragraph [0002]). According to a particular embodiment of the invention, a lamella body having a downstream lamella end that includes a first surface, a portion coupled to and

sloped relative to the first surface, and a second surface, located opposite said first surface provided with a non-planar surface. (Appellants' independent claim 1). The geometry of the lamella has been advantageous in obtaining stable flow conditions, even with asymmetrical flow channels, and the best flow against the structured (non-planar) lamella end to avoid turbulence. (Specification paragraph [0008]).

Lamellae have been utilized by those ordinarily skilled in the art to separate fibrous suspension flows from each other in a headbox nozzle. It is known to angle the upper and lower sides of the lamella ends and it is known to provide grooves on the upper and lower sides of the lamella ends. However, it has been discovered that these lamellae lead to unstable flow conditions, which tends to create oscillations in the fibrous suspension flow, because the flows do not always run symmetrically. In this manner, a deterioration of the stream quality results, which produces defects in the produced web. (Specification paragraphs [0003] - [0005]).

To avoid the above-noted drawbacks of the prior art, the instant invention discloses a headbox 1 comprising a feed device 2 for a fibrous suspension 3. Headbox nozzle 7 includes two machine-width lamellae 10.1 and 10.2, in which lower lamella 10.1 is flexibly attached and upper lamella 10.2 being rigidly attached to turbulence producer 5. Both lamellae 10.1 and 10.2 have a respective lamella length  $L_L$ , and, on their respective downstream lamella ends 11.1 and 11.2, sloped portions 12.11 and 12.12 are provided on the

lamella surface arranged to face upper nozzle wall 13.2 and respective structures 12.21 and 12.22 are provided in or on the opposite surface, which faces lower nozzle wall 13.1. (Specification paragraphs [0053] - [0054]; and Figure 1).

Figure 3a shows a schematic longitudinal section of downstream lamella end 11.1 of lamella 10.1 in accordance with the features of the present invention. In particular, a sloped portion 12.11 features an angle of slope  $\alpha_s$  within a range of about 1.5° to 6°, and preferably between about 2.5° to 5°. Moreover, lamella end 11.1 features a height H from an end of the sloped portion to the bottom side 10.1 of between about 0.4 mm to 0.6 mm, and preferably about 0.5 mm. Lamella 10.1 has a predominant lamella thickness D of between about 2 to 6 mm, and preferably about 4 mm. (Specification paragraphs [0062] - [0063]; and Figure 3a).

Further, structured lamella end 11.1 may be embodied or formed with a grooved structure 22 that is essentially rectangular and/or wedge-shaped and/or parabolic and/or essentially round with constant and/or varying depths T and/or varying spacings. In this regard, Figure 3b shows exemplary views according to elevation arrow E depicted in Figure 3a on structured lamella ends 11.1 of lamellae 10.1 according to the invention, such that structured lamella ends 11.1 of lamellae 10.1 according to the invention can feature a plurality of grooves 22 with rectangular (A) and/or wedge-shaped (B) and/or parabolic (C) and/or round form with constant and/or varying depth and/or varying spacing. (Specification

paragraphs [0062] - [0066]; and Figure 3b).

**(6) ISSUES**

- (A) Whether Claims 1 - 3, 11, 15, 17 - 23, 31, 35, 37 - 42, 44, and 48 - 50 are Improperly Rejected Under 35 U.S.C. § 102(b) as Anticipated by RUF et al. (U.S. Patent No. 5,645,689) [hereinafter “RUF”];**
- (B) Whether Claims 1 - 3, 15, 17- 23, 31, 35, 37 - 42, 44, and 48 - 50 are Improperly Rejected Under 35 U.S.C. § 102(b) as Anticipated by SANFORD (U.S. Patent No. 4,941,950);**
- (C) Whether Claims 12, 32, 46, and 51 - 53 are Improperly Rejected Under 35 U.S.C. § 103(a) as being unpatentable over RUF in view of SANFORD; and**
- (D) Whether Claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 are Improperly Rejected Under 35 U.S.C. § 103(a) as being unpatentable over RUF or SANFORD.**

**(7) GROUPING OF CLAIMS**

For the purpose of this appeal, Appellants submit that none of the claims stand or fall together. Therefore, each of claims 1 - 53 are separately patentable for the reasons set forth hereinbelow.

**(8) ARGUMENT**

**(A) The Rejection of Claims 1 - 3, 11, 15, 17 - 23, 31, 35, 37 - 42, 44, and 48 - 50 Under 35 U.S.C. § 102(b) Over RUF is in Error, the Rejection Should be Reversed, and the Application Should be Remanded to the Examiner.**

The Examiner asserts that RUF shows a lamella structured in the manner recited in Appellants' claims. In particular, the Examiner notes column 4, line 64 - column 5, line 6 and Figure 6 shows that the lamella can be provided with a non-planar surface, i.e., a combination of structure 9.6 and 8.6 of Figure 6 form a non-planar surface. Appellants traverse the Examiner's assertions.

Appellants' independent claim 1 recites, *inter alia*, a lamella body having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body, and said downstream lamella end comprising a first surface, a portion coupled to and sloped relative to said first surface, and a *second surface, located opposite said first surface, provided with a non-planar surface*. Moreover, independent claim 22 recites, *inter alia*, a lamella mounted within said headbox nozzle having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body; and said downstream lamella end comprising a first surface, a portion coupled to and sloped relative to said first surface, and a *second surface, located opposite said first surface*,

*provided with a non-planar surface.* Appellants' independent claim 44 recites, *inter alia*, a lamella body having a first and second surface and a mountable end and a downstream end remote from said mountable end, and said downstream end comprising a sloped surface obliquely oriented with respect to and coupled to said first surface and *a non-planar surface provided as said second surface.*

Appellants note that, while RUF discloses lamellae in a multilayer headbox, RUF fails to provide any disclosure regarding the surfaces of the lamellae, and certainly fails to provide any teaching that the various surfaces of the lamellae are not planar, as recited in the independent claims.

While acknowledging that the lamellae of RUF are formed by a number of surfaces, i.e., parallel surfaces, converging surfaces, and oblique surfaces, as shown in Figures 3 - 8, Appellants submit that RUF provides no disclosure that any of these surfaces are non-planar, and certainly fails to disclose that a second surface, as defined in the pending claims, has a non-planar surface, as recited in at least independent claims 1, 22, and 44.

While the Examiner appears to consider the second surface to be a combination of two obliquely oriented planar surfaces, there is no disclosure that the second surface, opposite the first surface is non-planar. In fact, Appellants note that the lamella of RUF is composed of a number of planar surfaces, and there is no disclosure that any of the lamella surfaces of RUF are non-planar, as recited in Appellants' claims.

Moreover, Appellants note that Figure 2 of RUF illustrates a view of the apparatus looking into the nozzle (direction II depicted in Figure 1), in which a constant distance is maintained between the surface of nozzle tips 1 and 1' and lamella 2. Appellants further note that this illustration fails to provide any support for the Examiner's assertion that the lamella surface is not planar.

Because RUF fails to disclose at least the above-noted feature, Appellants submit that this document fails to disclose each and every recited feature of the instant invention. Thus, Appellants submit that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b) and that the instant rejection should be withdrawn.

Further, Appellants submit that, as RUF fails to anticipate the above-noted features with regard to the recited lamella and headbox, RUF certainly fails to disclose any of the subject matter related to the arrangement of the lamella elements and/or arrangement of the lamella within the headbox, as recited in at least claims 2, 3, 11, 12, 15, 17 - 21, 23, 31, 32, 34, 37 - 42, 46, and 48 - 50. Moreover, Appellants submit that, as these claims recite additional features and/or arrangements of the lamella and/or headbox, these claims are separately patentable over RUF. In particular, Appellants submit that RUF fails to anticipate, *inter alia*, the lamella is structured and arranged to be mounted within the headbox nozzle supplying a suspension for forming paper, cardboard or tissue machine, as recited in claim

2; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 3; in combination with the headbox, wherein said lamella is located within the headbox nozzle and the upper nozzle wall in the area of the exit opening is coupled to an adjustable screen, and wherein said sloped portion is positioned toward the adjustable screen, as recited in claim 11; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 12; said lamella has a length that is at least about 80% of the nozzle length, as recited in claim 15; said lamella is structured and arranged to be mounted in a headbox with sectioned consistency control, as recited in claim 17; said lamella is structured and arranged to be mounted in a headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 18; the stream velocity is more than about 1,800 m/s, as recited in claim 19; said lamella is structured and arranged to be mounted in a multi-layer headbox, as recited in claim 20; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 21; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 23; an adjustable screen coupled to said upper nozzle wall, wherein said sloped portion is positioned toward the adjustable screen, as recited in claim 31; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and

(C) varying spacing, as recited in claim 32; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 34; said headbox is structured and arranged for sectioned consistency control, as recited in claim 37; said headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 38; the stream velocity is more than about 1,800 m/s, as recited in claim 39; said headbox comprises in a multi-layer headbox, as recited in claim 40; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 41; said lamella is fixedly mounted in said headbox nozzle, as recited in claim 42; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; the first surface is provided with a non-planar surface, as recited in claim 48; the first surface is provided with a non-planar surface, as recited in claim 49; and the first surface is provided with a non-planar surface, as recited in claim 50.

Accordingly, Appellants request that the Board reverse the Examiner's decision to finally reject claims 1 - 3, 11, 12, 15, 17 - 23, 31, 32, 34, 37 - 42, 44, 46, and 48 - 50 and remand the application to examining group for reconsideration and early allowance of all claims.

**(B) The Rejection of Claims 1 - 3, 15, 17- 23, 31, 35, 37 - 42, 44, and 48 - 50**

**Under 35 U.S.C. § 102(b) Over SANFORD is in Error, the Rejection Should be Reversed, and the Application Should be Remanded to the Examiner.**

The Examiner asserts that SANFORD discloses a lamella having an upstream and a downstream structure. In particular, the Examiner asserts that the downstream portion of the lamella has a first surface 50, sloped portion 24D, and a second surface 22D opposite the first surface, and that SANFORD discloses the use of grooves in the first or second lamella surfaces. Appellants traverse the Examiner's assertions.

Appellants note that, in contrast to RUF, which was discussed above, SANFORD discloses a grooved trailing element for a headbox. However, Appellants note that the pending claims are not directed solely to non-planar lamellae. Instead, Appellants' independent claims additionally recite, *inter alia*, the downstream lamella end comprises a first surface, *a portion coupled to and sloped relative to said first surface*, and a second surface, located opposite said first surface, provided with a non-planar surface, as recited in at least independent claims 1, 22, and 44.

Appellants note that Figures 7 - 10 of SANFORD illustrate lamellae having converging surfaces 42 and 22, in which both surfaces are grooved surfaces. However, contrary to the expressly recited features of the instant invention, SANFORD fails to disclose the recited sloped or oblique portion coupled to a first surface, as recited in at least

independent claims 1, 22, and 44.

Because SANFORD fails to disclose at least the above-noted feature, Appellants submit that this document fails to disclose each and every recited feature of the instant invention. Thus, Appellants submit that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b) and that the instant rejection should be withdrawn.

Further, Appellants submit that, as SANFORD fails to anticipate the above-noted features with regard to the recited lamella and headbox, SANFORD certainly fails to disclose any of the subject matter related to the arrangement of the lamella elements and/or arrangement of the lamella within the headbox, as recited in at least claims 2, 3, 15, 17- 21, 23, 31, 35, 37 - 42, and 48 - 50. Moreover, Appellants submit that, as these claims recite additional features and/or arrangements of the lamella and/or headbox, these claims are separately patentable over SANFORD. In particular, Appellants submit that SANFORD fails to anticipate, *inter alia*, the lamella is structured and arranged to be mounted within the headbox nozzle supplying a suspension for forming paper, cardboard or tissue machine, as recited in claim 2; said lamella has a length that is at least about 80% of the nozzle length, as recited in claim 15; said lamella is structured and arranged to be mounted in a headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 18; the stream velocity is more than about 1,800 m/s, as recited in claim 19; said lamella is structured

and arranged to be mounted in a multi-layer headbox, as recited in claim 20; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 21; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 23; an adjustable screen coupled to said upper nozzle wall, such that said sloped portion is positioned toward the adjustable screen, as recited in claim 31; wherein said nozzle has a nozzle length and said lamella has a length that is at least about 80% of said nozzle length, as recited in claim 35; said headbox is structured and arranged for sectioned consistency control, as recited in claim 37; said headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 38; the stream velocity is more than about 1,800 m/s, as recited in claim 39; said headbox comprises in a multi-layer headbox, as recited in claim 40; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 41; said lamella is fixedly mounted in said headbox nozzle, as recited in claim 42; the first surface is provided with a non-planar surface, as recited in claim 48; the first surface is provided with a non-planar surface, as recited in claim 49; and the first surface is provided with a non-planar surface, as recited in claim 50.

Accordingly, Appellants request that the Board reverse the Examiner's decision to finally reject claims 1 - 3, 15, 17- 23, 31, 35, 37 - 42, 44, and 48 - 50 and remand the application to examining group for reconsideration and early allowance of all claims.

**(C) The Rejection of Claims 12, 32, 46, and 51 - 53 Under 35 U.S.C. § 103(a)**

**Over RUF in view of SANFORD is in Error, the Rejection Should be Reversed, and the Application Should be Remanded to the Examiner.**

The Examiner asserts that, while RUF does not disclose a grooved surface, it would have been obvious to include such a surface in view of the disclosure of SANFORD.

Appellants again refer the Examiner to Figure 2 of RUF, as well as the accompanying text. In particular, Appellants note that RUF discloses that tip t should be as exactly straight-lined as possible from side wall to side wall, i.e., it should be *as close as possible to parallel to the outlet ends*, see RUF, column 4, lines 16 - 23.

In establishing a *prima facie* case of obviousness under 35 U.S.C. § 103, it is incumbent upon the Examiner to provide a reason *why* one of ordinary skill in the art would have found it obvious to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. *See Ex parte Clamp*, 227 USPO 972 (BPAI 1985) To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from Applicant's disclosure. *See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). Notwithstanding the Examiner's statement in the rejection that it would have been obvious to modify RUF to include the grooved surface of SANFORD, Appellants contend that the Examiner has not presented or

shown a reason *why* one of ordinary skill in the art would have been led to modify RUF. It is respectfully submitted that the courts have long held that it is impermissible to use Appellants' claimed invention as an instruction manual or "template" to piece together teachings of the prior art so that the claimed invention is purportedly rendered obvious. *See In re Fritch*, 972 R.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

Because RUF expressly discloses that the surfaces should be parallel in order to obtain the desired operation of the headbox, Appellants submit that the modification asserted by the Examiner is contrary to the express disclosure of RUF. That is, because SANFORD discloses a lamella having two grooved surfaces, Appellants submit that the asserted modification would be contrary to the express intention of RUF that tip t to be as exactly straight-lined as possible.

Appellants note that the specifically described arrangement enables RUF to operate in its desired manner, and there is no teaching or suggestion that utilizing a grooved surfaced lamella would enable to RUF to continue operating as intended. Thus, Appellants submit that the art of record fails to provide the requisite motivation or rationale for combining the art of record in the manner asserted by the Examiner. In particular, as the asserted combination appears to be contrary to express disclosure of RUF, Appellants submit that the instant rejection is improper and should be withdrawn.

Thus, Appellants submit that, as the art of record fails to teach or suggest the asserted

modification of RUF in view of SANFORD, no proper combination of these applied documents can render unpatentable the invention recited in at least independent claims 1, 22, and 44. Moreover, as no proper combination of RUF in view of SANFORD renders unpatentable the combination of features with regard to the recited lamella and headbox, no proper combination of RUF in view of SANFORD can render unpatentable claims directed to the subject matter related to the arrangement of the lamella elements and/or arrangement of the lamella within the headbox, as recited in at least claims 12, 32, 46, and 51 - 53. Therefore, Appellants submit that no proper modification of RUF in view of SANFORD teaches or suggests, *inter alia*, said non-planar surface comprises grooves having at least one of (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 12; said non-planar surface comprises grooves having at least one of (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 32; said non-planar surface comprises grooves having at least one of (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; said non-planar surface comprises a grooved surface, as recited in claim 51; said non-planar surface comprises a grooved surface, as recited in claim 52; and said non-planar surface comprises a grooved surface, as recited in claim 53.

Accordingly, Appellants request that the Board reverse the Examiner's decision to finally reject claims 12, 32, 46, and 51 - 53 under 35 U.S.C. § 103(a) and remand the application to the examining group for reconsideration and allowance of the claims.

**(D) The Rejection of Claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 Under 35 U.S.C. § 103(a) Over RUF or SANFORD is in Error, the Rejection Should be Reversed, and the Application Should be Remanded to the Examiner.**

The Examiner asserts that the features recited in the instant claims are merely obvious design variants of the lamellae of RUF and/or SANFORD. Appellants traverse the Examiner's assertions.

Rejections based on 35 U.S.C. § 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The Examiner has the initial duty of supplying the factual basis for the rejection and may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis. *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967). As stated in *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984):

[t]o imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

Appellants submit that it is apparent that the only reason to combine the teachings of the applied references in the manner proposed by the Examiner results from a review of Appellants' disclosure and the application impermissible hindsight.

With regard to RUF, Appellants note that RUF fails to provide any teaching or suggestion that would lead one ordinarily skilled in the art to utilize non-planar second lamella surface, as recited in at least independent claims. In particular, as RUF specifically discloses that it is intended that tip t of the lamella be as exactly straight-lined as possible from side wall to side wall, Appellants submit that there is no suggestion regarding a non-planar second surface, as recited in the instant invention.

Regarding SANFORD, Appellants note that the grooves formed in the surfaces are utilized to achieve the desired operation of the headbox, and there is no teaching or suggestion that forming an additional lamella surface obliquely to a first surface would enable SANFORD to continue operating in its intended manner. That is, SANFORD discloses a specific arrangement of grooves on opposing sides of a lamella, but there is no teaching or suggestion as to how suspension flow over these surfaces would be changed/disrupted due to adding an additional oblique surface to the lamella.

Further, Appellants note that the lamellae of the instant invention is structured so as to avoid instabilities in flow conditions and to avoid a tendencies to oscillate. Appellants note that, as neither RUF nor SANFORD identify the problem to be addressed by the instant

invention, Appellants submit that it would not have been obvious to modify these documents in the manner asserted by the Examiner. Moreover, because neither applied document provides any suggestion as to what might be expected from modifying the lamellae from the respective documents in the manner asserted by the Examiner, Appellants submit that these documents cannot render obvious the instant invention.

Thus, Appellants submit that neither RUF nor SANFORD provides any teaching or suggestion that would render the instant invention obvious. Moreover, Appellants submit that neither applied document of record provides the necessary motivation or rationale for modification in the manner asserted by the Examiner.

As the art of record fails to teach or suggest the asserted modifications of either RUF or SANFORD, no proper modification of these documents can render unpatentable the invention recited in at least independent claims 1, 22, and 44. Moreover, as no proper modification of RUF or SANFORD renders unpatentable the combination of features with regard to the recited lamella and headbox, no proper modification of RUF or SANFORD can render unpatentable claims directed to the subject matter related to the arrangement of the lamella elements and/or arrangement of the lamella within the headbox, as recited in at least claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 . Therefore, Appellants submit that no proper modification of RUF or SANFORD teaches or suggests, *inter alia*, said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface, as recited in

claim 4; said angle is between about 2.5° to 5°, as recited in claim 5; said downstream lamella end has a height of between about 0.3 mm and 1.0 mm, as recited in claim 6; the height is between about 0.4 mm and 0.6 mm, as recited in claim 7; said height is determined from a distance between an end of said sloped portion and said second surface, as recited in claim 8; said lamella has a predominant lamella thickness of between about 2 mm and 6 mm, as recited in claim 9; said predominant thickness is about 4 mm, as recited in claim 10; said lamella is composed of at least one high-performance polymer, as recited in claim 13; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 14; in combination with the headbox, wherein a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about 3 m/s, as recited in claim 16; said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface, as recited in claim 24; said angle is between about 2.5° to 5°, as recited in claim 25; said downstream lamella end has a height of between about 0.4 mm and 0.6 mm, as recited in claim 26; the height is about 0.5 mm, as recited in claim 27; said height is determined from a distance between an end of said sloped portion and said second surface, as recited in claim 28; said lamella has a predominant lamella thickness of between about 2 mm and 6 mm, as recited in claim 29; said predominant thickness is about 4 mm, as recited in claim 30; said lamella is composed of at least one high-performance polymer, as recited

in claim 33; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 34; a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about 3 m/s, as recited in claim 36; wherein said lamella is pivotably mounted in said headbox nozzle, as recited in claim 43; said sloped surface is obliquely oriented relative to said first surface at an angle of between about 1.5° to 6° to said first surface, as recited in claim 45; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; and said downstream lamella end has a height, determined from a distance between an end of said sloped portion and said second surface, of between about 0.4 mm and 0.6 mm, as recited in claim 47.

Accordingly, Appellants request that the Examiner reconsider and withdraw the rejection of claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 under 35 U.S.C. § 103(a) and indicate that these claims are allowable.

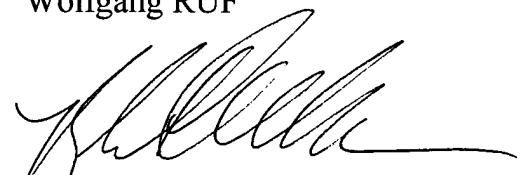
**(E) Conclusion**

Claims 1 - 3, 11, 12, 15, 17 - 23, 31, 32, 34, 37 - 42, 44, 46, and 48 - 50 are patentable under 35 U.S.C. § 102(b) over RUF; claims 1 - 3, 15, 17- 23, 31, 35, 37 - 42, 44, and 48 - 50 are patentable under 35 U.S.C. § 102(b) over SANFORD; claims 12, 32, 46, and 51 - 53

are patentable under 35 U.S.C. § 103(a) over RUF in view of SANFORD; and claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 are patentable under 35 U.S.C. § 103(a) over RUF or SANFORD. Specifically, the applied art of record fails to anticipate or render obvious the unique combination of features recited in Appellants' claims 1 - 53. Accordingly, Appellants respectfully request that the Board reverse the outstanding rejections of the claims 1 - 53 under 35 U.S.C. §§ 102(b) and 103(a) and remand the application to the Examiner for withdrawal of the rejection.

Thus, Appellants respectfully submit that each and every pending claim of the present application meets the requirements for patentability under 35 U.S.C. §§ 102(b) and 103(a), and that the present application and each pending claim are allowable over the prior art of record.

Respectfully submitted,  
Wolfgang RUF



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Attachments: Appendix A: Claims on Appeal

**APPENDIX A**

***CLAIMS ON APPEAL***

1. A lamella of a headbox through which at least one fibrous suspension flows, the headbox having a machine-width headbox nozzle with a nozzle length and an exit opening, and the headbox nozzle being delimited by an upper nozzle wall and a lower nozzle wall, said lamella, which is structured and arranged to be mounted within the headbox nozzle, comprising:

a lamella body having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body; and

said downstream lamella end comprising a first surface, a portion coupled to an sloped relative to said first surface, and a second surface, located opposite said first surface, provided with a non-planar surface.

2. The lamella in accordance with claim 1, wherein the lamella is structured and arranged to be mounted within the headbox nozzle supplying a suspension for forming paper, cardboard or tissue machine.

3. The lamella in accordance with claim 1, wherein said first surface is structured and arranged to be positioned to face one of the nozzle walls.

4. The lamella in accordance with claim 1, wherein said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface.

5. The lamella in accordance with claim 4, wherein said angle is between about 2.5° to 5°.

6. The lamella in accordance with claim 1, wherein said downstream lamella end has a height of between about 0.4 mm and 0.6 mm.

7. The lamella in accordance with claim 6, wherein the height is about 0.5 mm.

8. The lamella in accordance with claim 6, wherein said height is determined from

a distance between an end of said sloped portion and said second surface.

9. The lamella in accordance with claim 1, wherein said lamella has a predominant lamella thickness of between about 2 mm and 6 mm.

10. The lamella in accordance with claim 9, wherein said predominant thickness is about 4 mm.

11. The lamella in accordance with claim 1 in combination with the headbox, wherein said lamella is located within the headbox nozzle and the upper nozzle wall in the area of the exit opening is coupled to an adjustable screen, and wherein said sloped portion is positioned toward the adjustable screen.

12. The lamella in accordance with claim 1, wherein said non-planar surface comprises grooves having at least one of:

- (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure,
- (B) varying depth, and
- (C) varying spacing.

13. The lamella in accordance with claim 1, wherein said lamella is composed of at least one high-performance polymer.

14. The lamella in accordance with claim 13, wherein said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU).

15. The lamella in accordance with claim 1, wherein said lamella has a length that is at least about 80% of the nozzle length.

16. The lamella in accordance with claim 1 in combination with the headbox, wherein a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about 5 m/s.

17. The lamella in accordance with claim 1, wherein said lamella is structured and

arranged to be mounted in a headbox with sectioned consistency control.

18. The lamella in accordance with claim 1, wherein said lamella is structured and arranged to be mounted in a headbox designed for a stream velocity of more than about 1,500 m/s.

19. The lamella in accordance with claim 18, wherein the stream velocity is more than about 1,800 m/s.

20. The lamella in accordance with claim 1, wherein said lamella is structured and arranged to be mounted in a multi-layer headbox.

21. The lamella in accordance with claim 20, wherein said lamella is structured and arranged to be an intermediate lamella.

22. A headbox for supplying at least one fibrous suspension flows, comprising:  
a headbox nozzle having an exit opening, said headbox nozzle and said exit opening being delimited by an upper nozzle wall and a lower nozzle wall;

a lamella mounted within said headbox nozzle having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body; and

said downstream lamella end comprising a first surface, a portion coupled to and sloped relative to said first surface, and a second surface, located opposite said first surface, provided with a non-planar surface.

23. The headbox in accordance with claim 22, wherein said first surface is structured and arranged to be positioned to face one of the nozzle walls.

24. The headbox in accordance with claim 22, wherein said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface.

25. The headbox in accordance with claim 24, wherein said angle is between about 2.5° to 5°.

26. The headbox in accordance with claim 22, wherein said downstream lamella

end has a height of between about 0.4 mm and 0.6 mm.

27. The headbox in accordance with claim 26, wherein the height is about 0.5 mm.

28. The headbox in accordance with claim 26, wherein said height is determined from a distance between an end of said sloped portion and said second surface.

29. The headbox in accordance with claim 22, wherein said lamella has a predominant lamella thickness of between about 2 mm and 6 mm.

30. The headbox in accordance with claim 29, wherein said predominant thickness is about 4 mm.

31. The headbox in accordance with claim 22, further comprising an adjustable screen coupled to said upper nozzle wall,

wherein said sloped portion is positioned toward the adjustable screen.

32. The headbox in accordance with claim 22, wherein said non-planar surface comprises grooves having at least one of:

(A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure,

(B) varying depth, and

(C) varying spacing.

33. The headbox in accordance with claim 22, wherein said lamella is composed of at least one high-performance polymer.

34. The headbox in accordance with claim 33, wherein said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU).

35. The headbox in accordance with claim 22, wherein said nozzle has a nozzle length and said lamella has a length that is at least about 80% of said nozzle length.

36. The headbox in accordance with claim 22, wherein a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than

about 5 m/s.

37. The headbox in accordance with claim 22, wherein said headbox is structured and arranged for sectioned consistency control.

38. The headbox in accordance with claim 22, wherein said headbox designed for a stream velocity of more than about 1,500 m/s.

39. The headbox in accordance with claim 38, wherein the stream velocity is more than about 1,800 m/s.

40. The headbox in accordance with claim 22, wherein said headbox comprises in a multi-layer headbox.

41. The headbox in accordance with claim 40, wherein said lamella is structured and arranged to be an intermediate lamella.

42. The headbox in accordance with claim 22, wherein said lamella is fixedly mounted in said headbox nozzle.

43. The headbox in accordance with claim 22, wherein said lamella is pivotably mounted in said headbox nozzle.

44. A lamella for a headbox in a fibrous material web production machine, comprising:

a lamella body having a first and second surface and a mountable end and a downstream end remote from said mountable end;

said downstream end comprising a sloped surface obliquely oriented with respect to and coupled to said first surface and a non-planar surface provided as said second surface.

45. The lamella in accordance with claim 44, wherein said sloped surface is obliquely oriented relative to said first surface at an angle of between about 1.5° to 6° to said first surface.

46. The lamella in accordance with claim 45, wherein said non-planar surface comprises grooves having at least one of:

(A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure,

(B) varying depth, and

(C) varying spacing.

47. The lamella in accordance with claim 44, wherein said downstream lamella end has a height, determined from a distance between an end of said sloped portion and said second surface, of between about 0.4 mm and 0.6 mm.

48. The lamella in accordance with claim 1, wherein the first surface is provided with a non-planar surface.

49. The lamella in accordance with claim 22, wherein the first surface is provided with a non-planar surface.

50. The lamella in accordance with claim 44, wherein the first surface is provided with a non-planar surface.

51. The lamella in accordance with claim 1, wherein said non-planar surface comprises a grooved surface.

52. The lamella in accordance with claim 22, wherein said non-planar surface comprises a grooved surface.

53. The lamella in accordance with claim 44, wherein said non-planar surface comprises a grooved surface.